

Claims

What I claim as my invention is:

1. A computer readable medium containing a file for storing a root storage including a model directory comprising at least one model, wherein said at least one model comprises a model header.

2. The computer readable medium of claim 1, wherein said at least one model further comprises at least one element list including at least one element chunk, wherein said at least one element chunk comprises an element chunk header and at least one element associated with said element chunk header.

3. A computer readable medium containing a file for storing a root storage including a model directory comprising a plurality of models, wherein each of said plurality of models comprises a model header, a graphic element list containing at least one element chunk, and a control element list containing at least one element chunk, wherein each said element chunk comprises an element chunk header and at least one element associated with its respective element chunk header.

4. The computer readable medium of claim 3, wherein said root storage further comprises a control model containing a control model header, a global control element list and a global graphic element list, wherein said global control element list and said global graphic element list contain element chunks including global elements.

5. The computer readable medium of claim 4, wherein said global elements contain information relevant for all models in said model directory.

6. The computer readable medium of claim 3, wherein said root storage further comprises at least one of a first stream containing a header, a second stream containing session information, a third stream containing a manifest and a fourth stream containing file properties.

7. The computer readable medium of claim 3, wherein said root storage further comprises at least one of a stream or a storage, which are not contained in said model directory.

8. The computer readable medium of claim 3, wherein at least one element chunk in said graphic element list is compressed.

9. The computer readable medium of claim 3, wherein at least one element chunk in said control element list is compressed.

10. The computer readable medium of claim 3, wherein at least one element chunk in said graphic element list is encrypted.

11. The computer readable medium of claim 3, wherein at least one element chunk in said control element list is encrypted.

12. The computer readable medium of claim 3, wherein at least one element chunk in said control element list is encrypted and compressed.

13. The computer readable medium of claim 3, wherein at least one element chunk in said graphic element list is encrypted and compressed.

14. The computer readable medium of claim 3, wherein said root storage is adapted to be operable with a computer aided design program.

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15. A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store a root storage comprising a model directory in a storage area; and

means for enabling said computing unit to store at least one model in said model directory, wherein said at least one model comprises a control element list having element chunks containing control elements, and a graphic element list having element chunks containing graphic elements.

16. The computer program product of claim 15, wherein said storage area is a memory unit in a network.

17. The computer program product of claim 15, wherein said storage area is a memory unit in a workstation.

18. The computer program product of claim 15, further comprising means for enabling the computing unit to store a control model in said root storage, wherein said control model includes a global graphic element list and a global control element list, wherein said global graphic element list contains at least one global element chunk having at least one global graphic element and said global control element list contains at least one global element chunk having at least one global control element.

19. The computer program product of claim 15, wherein at least one element chunk in said graphic element list is compressed.

20. The computer program product of claim 15, wherein at least one element chunk in said control element list is compressed.

21. The computer program product of claim 15, wherein at least one element chunk in said graphic element list is encrypted.

22. The computer program product of claim 15, wherein at least one element chunk in said control element list is encrypted.

23. The computer program product of claim 15, wherein at least one element chunk in said graphic element list is encrypted and compressed.

24. The computer program product of claim 15, wherein at least one element chunk in said control element list is encrypted and compressed.

25. The computer program product of claim 15, wherein said root storage is adapted to be operable with a computer aided design program.

26. The computer program product of claim 15, wherein said root storage further comprises at least one of a first stream containing a header, a second stream containing session information, a third stream containing a manifest and a fourth stream containing file properties.

27. The computer program product of claim 15, wherein said root storage further comprises at least one of a stream and a storage, neither of which are contained in said model directory.

28. A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store a root storage comprising a model directory in the computer readable medium; and

means for enabling said computing unit to store in the computer readable medium at least one model in said model directory, wherein said at least one model comprises a control element list having element chunks containing control elements, and a graphic element list having element chunks containing graphic elements.

29. The computer program product of claim 28, further comprising means for enabling said computing unit to store a control model in said root storage, wherein said control model includes a global graphic element list and a global control element list, wherein said global graphic element list contains at least one global element chunk
5 having at least one global graphic element and said global control element list contains at least one global element chunk having at least one global control element.

30. The computer program product of claim 28, wherein said root storage further comprises at least one of a first stream containing a header, a second stream containing session information, a third stream containing a manifest and a fourth stream containing file properties.

31. The computer program product of claim 28, wherein at least one element chunk in said graphic element list is compressed.

32. The computer program product of claim 28, wherein at least one element chunk in said control element list is compressed.

33. The computer program product of claim 28, wherein at least one element chunk in said graphic element list is encrypted.

34. The computer program product of claim 28, wherein at least one element chunk in said control element list is encrypted.

35. The computer program product of claim 28, wherein at least one element chunk in said graphic element list is encrypted and compressed.

36. The computer program product of claim 28, wherein at least one element chunk in said control element list is encrypted and compressed.

37. The computer program product of claim 28, wherein said root storage is adapted to be operable with a computer aided design program.

38. The computer program product of claim 28, wherein said root storage further comprises at least one of a stream and a storage, neither of which are contained in said model directory.

39. A computer program product comprising a computer readable medium having computer program logic, the computer program logic comprising:

means for enabling a computer system to store at least one root storage in a storage area;

5 means for enabling said computer system to store at least one model directory in said at least one root storage;

means for enabling said computer system to store at least one model in said model directory;

means for enabling said computer system to store in said at least one model a graphic element list having element chunks containing graphic elements and a control element list having element chunks containing control elements;

means for enabling said computer system to assign a preselected number of elements to each said element chunk;

means for enabling said computer system to allocate each of said preselected number of elements to an element chunk in one of said control element list and said graphic element list.

40. The computer program product of claim 39, further comprising:

means for enabling said computer system to compress each element chunk; and

5 means for enabling said computer system to store at least one compressed element chunk in at least one of the graphic element list and control element list.

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41. The computer program product of claim 39, further comprising:
means for enabling said computer system to encrypt each element chunk;
and

means for enabling said computer system to store at least one encrypted
5 element chunk in at least one of the graphic element list and control element list.

42. The computer program product of claim 39, further comprising:
means for enabling said computer system to compress and encrypt each
element chunk; and

means for enabling said computer system to store at least one encrypted
5 and compressed element chunk in at least one of the graphic element list and the control
element list.

43. The computer program product of claim 39, wherein said preselected
number is a maximum number.

44. The computer program product of claim 39, further comprising:
means for enabling said computer system to create an additional element
chunk when the number of elements exceeds said preselected number of elements
assigned to each element chunk;

means for enabling said computer system to assign a preselected number
of elements to said additional element chunk; and

means for enabling said computer system to store new elements in said
additional element chunk.

45. The computer program product of claim 44, further comprising:
means for enabling said computer system to compress each additional
element chunk; and

means for enabling said computer system to store at least one additional
5 compressed element chunk in at least one of said graphic element list and said control
element list.

46. The computer program product of claim 44, further comprising:
means for enabling said computer system to encrypt each additional
element chunk; and

5 means for enabling said computer system to store at least one additional
encrypted element chunk in at least one of said graphic element list and said control
element list.

47. The computer program product of claim 44, further comprising:
means for enabling said computer system to compress and encrypt each
additional element chunk; and

5 means for enabling said computer system to store at least one additional
encrypted and compressed element chunk in at least one of said graphic element list
and said control element list.

48. The computer program product of claim 44, wherein said preselected
number is a maximum number.

49. The computer program product of claim 39, further comprising means for
enabling said computer system to associate a header with said at least one root
storage.

50. The computer program product of claim 39, wherein said computer system
is the Internet.

51. The computer program product of claim 39, wherein said computer system
is an Intranet.

52. The computer program product of claim 39, wherein said computer system
is a local area network.

53. The computer program product of claim 39, wherein said storage area is a
file.

54. The computer program product of claim 39, wherein said storage area is adapted to be operable with a computer aided design program.

55. The computer program product of claim 39, further comprising means for enabling said computer system to store in said root storage at least one of a first stream containing a header, a second stream containing session information, a third stream containing a manifest and a fourth stream containing file properties.

56. The computer program product of claim 39, further comprising means for enabling said computer system to store at least one of a stream and a storage, neither of which are contained in said model directory, in said root storage.

57. The computer program product of claim 39, further comprising:
means for enabling said computer system to store a control model in each root storage;
means for enabling said computer system to store a graphic element list and a control element list in each control model;
means for enabling said computer system to allocate elements to element chunks in said control element list and said graphic element list; and
means for enabling said computer system to compress each element chunk to be stored in said graphic element list or said control model list in said control model directory.

58. A computer readable medium containing a file for storing an element list including at least one element chunk, wherein said at least one element chunk comprises an element chunk header and at least one element associated with said element chunk header.

59. The computer readable medium of claim 58, wherein said element list is a graphic element list.

60. The computer readable medium of claim 58, wherein said element list is a control element list.

61. The computer readable medium of claim 58, wherein said element list is a global graphic element list.

62. The computer readable medium of claim 58, wherein said element list is a global control element list.

63. The computer readable medium of claim 58, wherein said at least one element chunk is compressed.

64. The computer readable medium of claim 58, wherein said at least one element chunk is encrypted.

65. The computer readable medium of claim 58, wherein said at least one element chunk is encrypted and compressed.

66. A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store an element list in a storage area; and

means for enabling a computing unit to store at least one element chunk comprising an element chunk header and at least one element associated with the element chunk header in the element list.

67. The computer program product of claim 66, wherein said element list is a graphic element list.

68. The computer program product of claim 66, wherein said element list is a control element list.

69. The computer program product of claim 66, wherein said element list is a global graphic element list.

70. The computer program product of claim 66, wherein said element list is a global control element list.

71. The computer program product of claim 66, wherein said at least one element chunk is compressed.

72. The computer product of claim 66, wherein said at least one element chunk is encrypted.

73. The computer program product of claim 66, wherein said at least one element chunk is encrypted and compressed.

74. A computer program product comprising a computer readable medium having a computer program logic stored therein, the computer program logic comprising:

means for enabling a computing unit to store an element list in the computer readable medium; and

means for enabling said computing unit to store at least one element chunk comprising an element chunk header and at least one element associated with said element chunk header in the element list.

75. The computer program product of claim 74, wherein said element list is a graphic element list.

76. The computer program product of claim 74, wherein said element list is a control element list.

77. The computer program product of claim 74, wherein said element list is a global graphic element list.

78. The computer program product of claim 74, wherein said element list is a global control element list.

79. The computer program product of claim 74, wherein said at least one element chunk is compressed.

80. The computer product of claim 74, wherein said at least one element chunk is encrypted.

81. The computer program product of claim 74, wherein said at least one element chunk is encrypted and compressed.

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